

Quantum Electrical Metrology Division
Electrical and Electronics Engineering Laboratory
Ac-dc Difference Standards and Measurement Techniques Project

Monthly Highlight Submission

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Category: Impact of NIST Research and Services

Ac-dc Difference Measurements Consolidated

The Ac-dc Difference Standards and Measurement Techniques Project has recently expanded to include RF-dc measurements and ac-dc difference measurements at input voltages down to 2 mV. Prior to this consolidation, three laboratories were involved in calibrating thermal transfers standards. This division of responsibilities had a detrimental effect on the calibration service for thermal transfer standards, as customers were referred to two or three contacts in multiple laboratories and at multiple sites. With the transfer of RF-dc calibrations from the NIST Boulder Laboratories to Gaithersburg, and with the addition of low-voltage ac-dc difference in the Ac-dc Difference Standards and Measurement Techniques Project, however, calibration customers now enjoy one source for questions, problems, and calibration needs. The expanded ac-dc calibration service now offers voltage calibrations from 2 mV to 1000 V, 1 mA to 100 A, and a frequency range of 10 Hz to 1 GHz, all under the same project. Customers will immediately benefit by requiring only one contact for calibration needs, but will also benefit in the future as the increased efficiency of the calibration service will allow the Quantum Electrical Metrology Division to reduce calibration prices, reduce the turnaround time for calibrations, and to offer lower uncertainties for thermal transfer standard calibrations. In addition, a collaboration between the Ac-dc Difference Project and the Quantum Devices Project is working to incorporate an intrinsic ac standard into the calibration service at low voltages this year, providing a quantum reference at voltages of 100 mV and 5 kHz.

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